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Race and Mental Illness: An Epidemiologic Update*

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This paper presents findings on the relationship between race and mental health extracted from a major five year epidemiologic study conducted in the southeastern United States. Mental health scores on five separate psychiatric scales are compared for blacks and whites. These comparisons are made in two ways. First, simple correlations using T tests and analysis of variance are computed; then the variable race is included with age, sex and socioeconomic status in a stepwise multiple regression equation.

The results show that blacks had higher mean scores than whites on all the scales: the differences are statistically significant on every measure. When controlled for the other sociodemographic factors, however, the variable black is statistically significant in only two of the equations and in one of these the significance level is quite minimal. Being black is a highly significant variable when scores on a phobia scale are analyzed. In every instance, low socioeconomic status is the most powerful predictor of high mental health scores.

The authors conclude that there is no definitive evidence that race alone is a primary etiologic factor in accounting for differences in the rates of mental illness between blacks and whites.

Introduction

The study of the relationships between race and mental illness has been of interest to researchers for a long time. In the United States this interest can be traced clearly to the period following the Civil War. It can be conjectured that the presence of former slaves living as "emancipated" citizens in the wider society necessitated a redefinition of them as persons—a redefinition which included judgments about their intellectual, moral, ethical, physical and mental health characteristics. And, similarly, it can be argued that the current interest in certain racial differences, e.g., intelligence (Shockley, 1968; Jensen, 1969, 1973) can be accounted for in part by the new freedoms accorded blacks by recent civil rights amendments and court decisions.

Over the last 85 years there have been a great many diverse hypotheses offered which suggest that racial factors play an important etiologic role in accounting for perceived racial differences in the rates of mental illness (cf. O'Malley, 1914; Evarts, 1916; Rosanoff, 1917; Bevis, 1921; Lewis and Hubbard, 1931; Henderson and Gillespie, 1932; Malzberg, 1944; Cohen *et al.*, 1939; Lemkau *et al.*, 1942; Rountree *et al.*, 1945; Pasamanick *et al.*, 1959; D.C. Leighton *et al.*, 1963; Warheit *et al.*, 1973). A number of early writers suggested that American blacks were relatively free of mental illness following the Civil War because of the special care and supervision they received as slaves (Babcock, 1895; Witmer, 1891; Powell, 1896; O'Malley, 1914). Later, as more blacks became defined as being mentally ill, it was argued that their increasing rates were due to their sense of inferiority (Lind, 1914); others traced their mental health problems to residual factors associated with their African heritage (Evarts, 1916; Lind, 1917; Moore, 1926).

Some of the confusion regarding the rates of mental illness among blacks and whites can be traced to the methodologies used in obtaining the data. The earliest systematic enumerations of the mentally ill in the United States were made in connection with the general census of the population and included those who resided in private residences as well as those in institutional settings. These enumerations were conducted decenially from 1850 to 1880. For the 1880 and 1890 censuses, the assistance of physicians was solicited in an effort to secure a complete count of the

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nonhospitalized insane. (Malzberg, 1944 provides a review of findings related to these censuses.) After 1900, information on the "insane" was secured only on persons who came to the attention of a physician or who were remanded for treatment in an institution. It is not surprising, given this fact, that the numbers and rates of whites identified as "insane" exceeded those reported for blacks since most of the blacks were still residing in southern states where few facilities for them were being provided. They simply did not receive treatment for mental health problems, even when it was needed (Malzberg, 1944). It was not until the 1930 census, when counts of the mentally ill were restricted to those in state hospitals, that blacks had higher rates of reported insanity than whites; nonwhite rates of admission and treatment in public facilities have remained higher than those for whites since then. In 1970, this was true for almost every age, sex and marital status group (Redick and Johnson, 1970). Malzberg recognized the contaminating influences of the differential access to treatment facilities experienced by blacks and whites but dismissed them as non-important in his own widely cited research on the grounds that: "An almost ideal locus for such an investigation is New York State, where racial discrimination with respect to provision for the treatment of mental disease does not exist and where it is the policy of the state to accept all patients in need of such treatment (1944:377).

No serious researcher could accept this assumption today. Malzberg and others who have based their conclusions of findings from treatment data have not taken into account the fact that one's socioeconomic status has a strong influence on the locus of care and that data from private clinics and physicians are all but nonexistent. Hence, the poor, particularly the black poor, are more likely than whites to receive treatment in public settings where they are counted and reported by researchers working in the general area.

The findings from field surveys designed to measure the true prevalence of mental illness among racial groups are inconclusive. Of the 8 studies reviewed by Dohrenwend and Dohrenwend (1969), 4 reported higher rates for blacks and 4 reported higher rates for whites.

A careful review of these 8 studies indicates that the analytic procedures used reflect the periods of time in which they were conducted. Most of the racial comparisons were based on simple percentages; multivariate statistics, which permit simultaneous controls for a number of variables, were not available or not feasible. Obviously, this absence of controls necessitates caution in the interpretation of the findings reported.

The purpose of this paper is to report findings on race and mental illness from a major epidemiologic study recently completed in the southeastern United States. The results are presented in two ways: first by simple correlational techniques, then by use of a step-wise multiple regression analysis which permits simultaneous controls for a number of key sociodemographic variables.

Design

The data reported were secured in a county which was selected for its typicality. It had a 1970 population of 103,000 with approximately 75 percent living in or contiguous to one centrally located city: the remaining 25 percent resided in six small towns and scattered rural settlements.

A 317-item interview schedule was designed to measure the interrelatedness of major social and medical variables. Included in the instrument were: (1) demographic data and a comprehensive social history; (2) information on familial and other interpersonal relations; (3) items regarding life satisfactions, both interpersonal and other; (4) indices concerning religion, racial distance, anomie, perceptions of social change and social aspirations: (5) a series of questions concerning attitudes toward and utilization of health care services; (6) a medical systems review and detailed physical symptom data; and (7) a detailed in-

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ventory of mental symptomatology, including the Health Opinion Survey (MacMillan, 1957; Leighton, 1963) and a series of other scales developed to measure social psychiatric impairment. This paper presents findings related to five of these scales. These are: general psychopathology, phobias, anxiety symptom, anxiety function and depression.

A random sample of the county's 37,000 households was selected and via the Kish (1965) technique for randomizing respondents within households, a pretest sample of 322 was chosen and interviewed. After a slight revision of the interview schedule, an additional 1,645 interviews were obtained. The refusal rate was low—only 8.8 percent. The 322 pretest respondents and a patient group used for validation were rated for social psychiatric impairment by three project psychiatrists according to established criteria. The concept of "social psychiatric impairment" encompasses psychosocial distress along four dimensions: (1) traditional definitions of psychopathology, reported as the presence or absence of symptoms, (2) levels of functioning at home, at work, and in the broader social arena, (3) the quantity and quality of interpersonal relationships, and (4) indices of aspiration and satisfaction (Schwab *et al.,* 1970).

In this paper, data are reported on the 1,645 respondents interviewed as part of the major study. Emphasis is placed on the differential rates of social psychiatric impairment between blacks and whites as measured by the five symptomatology scale scores.

The five scales being utilized were developed to provide a normative description of the distribution of psychiatric symptomatology in the population rather than to diagnose individuals. Specifically, they were designed to measure clusters of symptomatology considered to be components of psychiatric disorder but not to measure psychiatric disorder as described in the DSM-II (Diagnostic and Statistical Manual of Mental Disorders, 1968). Preliminary validation of these scales has been established with a number of patient groups. In addition, supporting evidence of their validity is provided by the following: (1) many of the items included were drawn from prior psychiatric research; (2) the items were examined by a panel of experts and their content was judged to be appropriate; (3) factor analytic procedures empirically confirm their grouping into scales; and (4) the scales have an acceptable level of internal consistency as measured by Cronbach's Alpha (1951).

Findings

There are two tables for each of the five scales. The first table in each sequence presents mean scores, statistical significance levels by use of T tests and analysis of variance and, in addition, the percentage of each group with "high" scale scores. Respondents were placed in the "high" category when their scores were one standard deviation or more above the mean for the entire sample. It is recognized that this is a somewhat arbitrary assignment although data from a preliminary analysis of our patient groups generally validate the use of this procedure. The second table presents findings from a step-wise multiple regression equation which includes race along with controls for sex, socioeconomic status and age. Socioeconomic status is a combined index of mean education, occupation and income scores; the specific procedures are derived from the United States Bureau of the Census (1960).

General Psychopathology Scale

This scale contains the following items:

1. How often do you have unwelcome or strange thoughts or thoughts that frighten you?
2. How often do you find yourself doing the same things over and over to be sure they are right?
3. How often do you get upset, uptight, or irritable with those around you?
4. How often do you feel that people are trying to pick quarrels or start arguments with you?

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5. How often do you think people are following you or plotting against you?
6. How often do you get really angry?
7. How often do things not seem real to you or do you have feelings that you are not really here?
8. How often do you see or hear things that other people don't think are there?

The possible range of scores is 0 to 32. The mean score for the scale was 5.18 and the standard deviation was 3.18. Cronbach's Alpha overall was 0.71, and the item-whole correlations ranged from 0.31 to 0.52.

As reported in Table 1, blacks scored significantly higher than whites, $p < .001$. There were no significant differences between the scores for males and females. With the exception of respondents over 80 years of age, the mean scores decreased with advancing age, $p < .001$. There was an inverse relationship between SES and scale scores, $p < .001$.

As a group, 12.9 percent of the respondents scored high. About twice as many blacks as whites scored high. The percentage scoring high ranged from a minimum of 7.8 percent for those aged 70-79 to a maximum of 25.8 percent for those under 20 years of age. About four times as many respondents in the lowest SES quintile scored high as those in the top SES quintile.

The results of the multiple regression equation dealing with the General Psychopathology scale scores are reported in Table 2. The regression was significant ($F = 36.6$ with 4 and 1600 degrees of freedom). The four variables, age, SES, femaleness, and blackness, accounted for about 8 percent of the variance ($r^2 = 0.0833$). Age was the most significant; the B of −0.049 corresponds to a decline of about one point in the scale score for every 20 year increase in age. The B of 0.021 for SES corresponds to a decrease of about 0.4 points for

TABLE 1. GENERAL PSYCHOPATHOLOGY SCALE SCORES BY RACE, SEX, AGE AND SES

	N	Mean	SD	Sig.	% High
Total	1645	5.178	3.178		12.9
Race					
White	1267	5.003	2.883	T = 4.2256***	10.5
Black	366	5.798	4.005		21.6
Sex					
Male	736	5.098	3.120	T = 0.9227	11.1
Female	909	5.243	3.225		14.3
Age					
19 yrs. & under	81	7.111	3.834		25.9
20-29 yrs.	498	5.737	2.845		14.9
30-39 yrs.	272	5.213	3.278	ANOVA	10.9
40-49 yrs.	245	5.180	3.070	F = 13.2351***	12.5
50-59 yrs.	220	4.700	3.054	df = 7,1623	10.9
60-69 yrs.	179	4.151	3.062	r = −0.2124	9.5
70-79 yrs.	103	3.816	3.354		7.8
80-89 yrs.	33	4.818	3.441		15.2
SES					
1. 0-19	212	5.462	3.864		21.2
2. 20-39	379	5.507	3.898	ANOVA	18.5
3. 40-59	476	5.311	2.995	F = 4.6036***	12.9
4. 60-79	348	4.876	2.459	df = 4,1628	6.8
5. 80-99	218	4.546	2.274	r = −0.0983	4.9

* $p < .05$ ** $p < .01$ *** $p < .005$

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TABLE 2. PREDICTION OF GENERAL PSYCHOPATHOLOGY SCALE SCORES FROM RACE, SEX, SOCIOECONOMIC STATUS AND AGE

REGRESSION COEFFICIENTS

Variable*	B	Standardized Beta	Std Error B	F	Sig.
AGE	−0.04917	−0.27699	0.00450	119.477	$p < .005$
SES	−0.02110	−0.15847	0.00379	31.031	$p < .005$
BLACK	0.50605	0.06635	0.20627	6.019	$p < .05$
FEMALE	0.15382	0.02414	0.15363	1.002	N.S.
CONSTANT	8.05782				

EQUATION

$Y = \beta_1$ SES + β_2 Female + β_3 Black + β_4 Age + β_0

$Y = -0.02110$ SES + 0.15382 Female + 0.50605 Black − 0.04917 Age +8.05782

ANALYSIS OF VARIANCE

	df	Sum of Squares	Mean Square	F
Regression	4.	1345.48920	336.37230	36.35772
Residual	1600.	14802.78868	9.25174	

Multiple R	0.28865
R Square	0.08332
Standard Error	3.04167

* Uncollapsed scores were used for all variables.

every quintile increase in SES. The B of 0.506 for blackness was barely significant. It corresponds to an increase of only about one-half point in the scale for being black. Femaleness was not a statistically significant variable in the equation.

Phobia Scale

The Phobia scale contains the following items:

Do you have any strong fears about any of the following:

1. Driving or riding in a car?
2. Being in crowds?
3. Strangers?
4. Fear of bodily harm?
5. Being hexed, witched, "evil eye"?
6. Any particular animals or insects?
7. High places?
8. Closed in places.
9. Thunder and lightening?
10. The dark?

The possible range of scores was from 0 to 40 with a mean score of 6.57 and a standard deviation of 7.02. Cronbach's Alpha overall was 0.65 and the item-whole correlations ranged from 0.24 to 0.40.

The findings on the phobia scale by sociodemographic groups are reported in Table 3. Blacks scored significantly higher than whites, $p < .001$, and females scored significantly higher than males, $p < .001$. Mean scores did not vary significantly with age, but there was a strong inverse relationship between phobia scores and SES.

Overall, 15.2 percent of the respondents scored high. About three times as many blacks as whites and females as males scored high. Thirty-two percent of the respondents in the lowest SES quintile scored high in contrast to only 6 percent of those in the top SES quintile.

The multiple regression on the phobia scale scores by sociodemographic variables was significant ($F = 87.7$ with 4 and 1600 degrees of freedom). These findings, which are reported in Table 4, indicate that the four variables, blackness, femaleness, SES, and age, accounted for almost 18 percent of the variance ($r^2 = 0.18$). The B of 3.88 for blackness corresponds to an increase of

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TABLE 3. PHOBIA SCORES BY RACE, SEX, AGE AND SES

	N	Mean	SD	Sig.	% High
Total	1645	6.573	7.019		15.2
Race					
White	1267	5.465	6.081	T = 12.8021***	10.3
Black	366	10.557	8.516		32.8
Sex					
Male	736	4.337	5.435	T = 12.1311***	7.7
Female	909	8.383	7.613		21.2
Age					
19 yrs. & under	81	7.358	7.442		19.8
20-29 yrs.	498	5.936	6.598		12.3
30-39 yrs.	272	6.294	7.251	ANOVA	13.8
40-49 yrs.	245	6.808	7.212	F = 1.528	14.5
50-59 yrs.	220	6.745	7.066	df = 7,1623	15.0
60-69 yrs.	179	7.486	7.158	n.s.	20.1
70-79 yrs.	103	7.379	6.831	r = 0.0604	21.4
80-89 yrs.	33	7.273	7.580		18.2
SES					
1. 0-19	212	10.868	8.782		32.5
2. 20-39	379	7.578	7.463	ANOVA	19.3
3. 40-59	476	6.126	6.475	F = 34.1330***	14.0
4. 60-79	348	4.770	5.567	df = 4,1628	8.0
5. 80-99	218	4.752	5.439	r = −0.2579	5.8

* $p < .05$ ** $p < .01$ *** $p < .005$

TABLE 4. PREDICTION OF PHOBIA SCALE SCORES FROM RACE, SEX, SOCIOECONOMIC STATUS AND AGE

REGRESSION COEFFICIENTS

Variable*	B	Standardized Beta	Std Error B	F	Sig.
BLACK	3.88180	0.23034	0.43112	81.071	$p < .005$
FEMALE	3.76405	0.26717	0.32111	137.405	$p < .005$
SES	−0.04113	−0.13980	0.00792	26.990	$p < .005$
AGE	−0.01331	−0.03394	0.00940	2.004	N.S.
CONSTANT	6.21804				

EQUATION

$Y = \beta_1$ SES + β_2 Female + β_3 Black + β_4 Age + β_0

$Y = -0.04113$ SES + 3.76405 Female + 3.88180 Black −0.01331 Age +6.21804

ANALYSIS OF VARIANCE

	df	Sum of Squares	Mean Square	F
Regression	4.	14174.99083	3543.74771	87.68114
Residual	1600.	64666.90979	40.41631	

Multiple R	0.42402
R Square	0.17979
Standard Error	6.35738

* Uncollapsed scores were used for all variables.

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nearly 4 points in the total score for being black. The B of 3.76 for femaleness, the most significant variable, corresponds to an increase in the phobia scale score of nearly 4 points for being a female. The B of −0.041 for SES corresponds to a decrease of about 0.8 points in the phobia scale for every quintile increase in SES. Age was not statistically significant.

Anxiety Symptom Scale

This scale consists of the following items:

1. Do your hands ever tremble enough to bother you?
2. Are you ever troubled by your hands or feet sweating so that they feel damp or clammy?
3. Are you ever bothered by your heart beating hard?
4. Have you ever been troubled by cold sweats?
5. Do you feel that you are bothered by all sorts (different kinds) of ailments in different parts of your body?
6. Do you ever have loss of appetite?
7. Has ill health affected the amount of work (housework) you do?
8. Do you ever feel weak all over?
9. Do you ever have spells of dizziness?
10. Have you ever been bothered by shortness of breath when you are not exerting yourself?
11. For the most part do you feel healthy enough to carry out the things that you would like to do?
12. Have you ever had periods of days or weeks when you couldn't take care of things because you couldn't get going?

These items, with the exception of item 12, were drawn from the Health Opinion Survey.

The scale had a possible range of scores from 0 to 48 with a mean of 6.5 and standard deviation of 7.0. Cronbach's Alpha overall was 0.82 with overall item-whole correlations ranging from 0.30 to 0.62.

Data presented in Table 5 indicate the following: blacks scored significantly higher than whites, $p < .001$; older respondents had significantly higher scores than the younger ones, $p < .001$; females scored significantly higher than males, $p < .001$, and there was a strong inverse relationship between SES and anxiety symptom scale scores, $p < .001$.

Of the total sample, 14.3 percent scored high, i.e., one standard deviation or more above the mean. The percentage of blacks scoring high was twice that of whites. Of the respondents in the lowest SES quintile, 43.4 percent scored high in contrast to only 4 percent of the respondents in the top quintile.

Table 6 presents the results of the multiple regression analysis. The regression was significant ($F = 73.7$ with 4 and 1638 degrees of freedom). The three variables, SES, age, and femaleness, accounted for 15 percent of the variance ($r^2 = 0.15$). SES was the most significant; the B of −0.088 corresponds to a decrease in anxiety symptom scores of about 1.8 points for every quintile increase in SES. Age was the second most significant with the B of 0.058 corresponding to an increase of about 1 point for every 17 years increase in age. Femaleness was also significant; the B of 1.13 corresponds to an increase of about 1 point in the anxiety symptom scale score for being female. Race was not statistically significant in the equation.

Anxiety Function Scale

This scale contains the following items:

1. During the last year, did worry or nervousness get you down physically?
2. During the last year, did worry or nervousness cause problems with your family life?
3. During the last year, did worry or nervousness interfere with your social activities?
4. During the last year, have you ever had to stay at home or in bed because of worry or nervousness?

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TABLE 5. ANXIETY SYMPTOM SCALE SCORES BY RACE, SEX, AGE, AND SES

	N	Mean	SD	Sig.	% High
Total	1645	6.497	7.039		14.3
Race					
White	1267	5.933	6.513	T = 6.3849***	11.7
Black	366	8.574	8.365		24.0
Sex					
Male	736	5.537	7.032	T = 5.0171***	10.5
Female	909	7.275	6.952		17.5
Age					
19 yrs. & under	81	5.185	5.390		6.2
20-29 yrs.	498	5.042	5.209		7.1
30-39 yrs.	272	5.331	6.215	ANOVA	9.5
40-49 yrs.	245	6.376	6.987	F = 17.0762***	14.9
50-59 yrs.	220	7.741	8.017	df = 7,1623	19.5
60-69 yrs.	179	8.106	8.360	r = 0.2473	22.9
70-79 yrs.	103	10.689	9.163		33.0
80-89 yrs.	33	12.939	8.093		39.4
SES					
1. 0-19	212	12.472	9.092		43.4
2. 20-39	379	7.884	8.052	ANOVA	19.0
3. 40-50	476	5.431	5.462	F = 67.577***	8.8
4. 60-79	348	4.434	5.099	df = 4,1628	6.0
5. 80-99	218	4.106	4.558	r = 0.3419†	4.0

* $p < .05$ ** $p < .01$ *** $p < .005$

† Deviation from linearity was significant ($p < .05$)

TABLE 6. PREDICTION OF ANXIETY-SYMPTOM SCALE SCORES FROM RACE, SEX, SOCIOECONOMIC STATUS AND AGE

REGRESSION COEFFICIENTS

Variable*	B	Standardized Beta	Std Error B	F	Sig.
AGE	0.05778	0.14676	0.00949	37.056	$p < .005$
BLACK	−0.05815	−0.00344	0.43547	0.018	N.S.
FEMALE	1.12790	0.07981	0.32404	12.116	$p < .005$
SES	−0.08764	−0.29731	0.00799	120.260	$p < .005$
CONSTANT	7.86391				

EQUATION

$Y = \beta_1$ SES + β_2 Female + β_3 Black + β_4 Age + β_0

$Y = -0.08764$ SES + 1.12790 Female −0.05815 Black + 0.05778 Age +7.86391

ANALYSIS OF VARIANCE

	df	Sum of Squares	Mean Square	F
Regression	4.	12187.76975	3046.94244	72.37
Residual	1638.	68958.69890	42.09933	

Multiple R	0.38755
R Square	0.15019
Standard Error	6.48840

* Uncollapsed scores were used for all variables.

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5. During the last year, were you unable to do your usual work because of worry or nervousness?
6. In the last year, how often did you feel that you might have a nervous breakdown or that you might lose your mind?
7. Does this feeling get you down physically?
8. During the last year, has this feeling caused problems with your family/personal life?
9. Does this feeling interfere with your social activities?
10. During the last year, have you ever had to stay at home or in bed because of this feeling?
11. During the last year, were you unable to do your usual work at any time because of feeling that you might have a nervous breakdown?

The scale had a possible range of scores from 0 to 44, with a mean for the total sample of 2.56 and a standard deviation of 4.76. Cronbach's Alpha overall was 0.88, and the item-whole correlations overall ranged from 0.48 to 0.67.

The data reported in Table 7 show that blacks scored significantly higher than whites, $p < .05$; that females had significantly higher scores than males, $p < .001$; that younger respondents tended to have higher scores than older ones, and that there was a strong inverse relationship between SES and scale scores, $p < .001$.

Of the total sample, 19.3 percent scored high. About 21 percent of the females scored high in contrast to about 13 percent of the males. Twice as many of the youngest respondents scored high as those over the age of 70. Almost twice as many respondents in the lowest SES quintile scored high as those in the top SES quintile.

Table 8 presents the results of the multiple regression analysis. The regression was significant ($F = 12.8$ with 4 and 1638 degrees of freedom). The four variables, SES, femaleness, age, and black-

TABLE 7. ANXIETY FUNCTION SCALE SCORES BY RACE, SEX, AGE AND SES

	N	Mean	SD	Sig.	% High
Total	1645	2.457	4.765		17.3
Race					
White	1267	2.364	4.545	T = 1.6567*	16.8
Black	366	2.833	5.502		19.1
Sex					
Male	736	1.842	3.998	T = 4.7348***	13.3
Female	909	2.954	5.225		20.5
Age					
19 yrs. & under	81	3.025	4.772		24.7
20-29 yrs.	498	2.633	4.644		20.2
30-39 yrs.	272	2.316	4.607	ANOVA	14.9
40-49 yrs.	245	2.608	5.259	F = 1.0572	16.1
50-59 yrs.	220	2.718	5.514	df = 7,1623	17.3
60-69 yrs.	179	2.084	4.526	n.s.	14.5
70-79 yrs.	103	1.728	3.689	r = −0.0485†	12.6
80-89 yrs.	33	1.636	3.296		12.1
SES					
1. 0-19	212	2.887	5.338		20.3
2. 20-39	379	3.245	5.866	ANOVA	23.0
3. 40-59	476	2.300	4.710	F = 4.9304***	15.4
4. 60-79	348	2.011	3.575	df = 4,1628	15.7
5. 80-99	218	1.812	3.604	r = −0.0961	11.2

* $p < .05$ ** $p < .01$ *** $p < .005$

† Deviation from linearity was significant ($p < .05$)

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TABLE 8. PREDICTION OF ANXIETY FUNCTION SCALE SCORES FROM RACE, SEX, SOCIOECONOMIC STATUS AND AGE

REGRESSION COEFFICIENTS

Variable*	B	Standardized Beta	Std Error B	F	Sig.
AGE	−0.02739	−0.10258	0.00688	15.866	$p < .005$
BLACK	−0.05249	−0.00458	0.31542	0.028	N.S.
FEMALE	1.06631	0.11127	0.23471	20.641	$p < .005$
SES	−0.02436	−0.12189	0.00579	17.715	$p < .005$
CONSTANT	4.21864				

EQUATION

$Y = \beta_1$ SES + β_2 Female + β_3 Black + β_4 Age + β_0

$Y = -0.02436$ SES + 1.06631 Female − 0.05249 Black − 0.02739 Age +4.21864

ANALYSIS OF VARIANCE

	df	Sum of Squares	Mean Square	F
Regression	4.	1133.44861	283.36215	12.82
Residual	1638.	36178.27628	22.08686	

Multiple R	0.17429
R Square	0.03038
Standard Error	4.69967

* Uncollapsed scores were used for all variables.

ness, however, explained 3 percent of the variance ($r^2 = 0.0308$). Of these factors, SES was the most significant; the B of −0.024 corresponds to a decline of about one-half point in the scale score for every quintile rise in SES. The B of 1.07 corresponds to an increase in the score of about one point for being female. The B for age was −0.027, corresponding to a decrease in the scale score of about one-half point for every 20 year increase in age. Again, race was not statistically significant.

Depression Scale

This scale consists of the following questions, which are divided into five major categories.

Affect—mood

1. Do you feel in good spirits?
2. How often do you have crying spells or feel like it?
3. How often do you feel you don't enjoy doing things any more?
4. How often do you feel alone and helpless?
5. How often do you feel that people don't care what happens to you?
6. How often do you feel that life is hopeless?

Body complaints—somatic

7. Do you tend to feel tired in the mornings?
8. Do you feel that you are bothered by all sorts of ailments in different parts of your body?

Psychological patterns

9. Have you ever had periods of days or weeks when you couldn't take care of things because you couldn't get going?
10. Do you have any trouble getting to sleep and staying asleep?
11. How often do you have trouble with sleeping?
12. Do you ever have loss of appetite?
13. When things don't turn out, how often would you say you blame yourself?
14. How often do you think of suicide?
15. Life has changed so much in our modern world that people are powerless to control their own lives.

Future outlook

16. Do you sometimes wonder if anything is worthwhile any more?

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17. How often would you say that things don't turn out the way you want them to?
18. How does the future look to you?

The depression scale scores ranged from 0 to 63, with a mean score of 16.58, and standard deviation of 9.66. The 18 items had a Cronbach's Alpha coefficient of 0.8399.

As shown in Table 9, there is a slight curvilinear relationship between depression scale scores and age, with somewhat higher scores in those under 19 and over 70 years of age. Blacks scored significantly higher than whites as did females compared to males. Again, there was an inverse relationship between depression scores and SES.

Table 10 indicates that the regression was significant (F = 116.3 with 2 and 1602 degrees of freedom). The two variables, SES and femaleness accounted for 13 percent of the variance ($r^2 = 0.128$). SES was the more significant variable with the B of −0.129 corresponding to a decline of about 2.6 points in depression scores for every quintile rise in SES. Femaleness was the less significant variable; the B of 2.56 corresponds to an increase of about 2.6 points in depression scale scores for being female. Neither race nor age were statistically significant.

Summary and Discussion

Research dealing with the relationships between race and mental illness has often been characterized by imprecise theoretical formulations and inadequate methodologies. Consequently, the findings have often been disparate and inconclusive. Early research results based on treatment data as enumerated by the decennial censuses were faulty since blacks did not have equal access to mental health services. Later research, such as that of Malzberg (1944), used treatment rates as determined by state hospital or other public agency records as a basis for making judgments about race and mental illness. These findings are suspect as well, since the poor, and

TABLE 9. DEPRESSION SCALE SCORES BY RACE, SEX, AGE, AND SES

	N	Mean	SD	Sig.	% High
Total	1645	16.585	9.659		19.2
Race					
White	1267	15.654	9.106	T = 7.5218***	16.4
Black	366	19.902	10.827		29.2
Sex					
Male	736	14.815	9.246	T = 6.7778***	13.3
Female	909	18.018	9.753		24.0
Age					
19 yrs. & under	81	18.457	8.902		18.5
20-29 yrs.	498	15.390	8.216		12.5
30-39 yrs.	272	15.537	9.662	ANOVA	17.8
40-49 yrs.	245	16.608	10.329	F = 3.7577***	22.6
50-59 yrs.	220	17.936	10.634	df = 7,1623	24.5
60-69 yrs.	179	17.615	10.697	r = 0.0910	22.3
70-79 yrs.	103	18.155	10.075		26.2
80-89 yrs.	33	19.576	10.568		33.3
SES					
1. 0-19	212	22.627	11.084		40.6
2. 20-39	379	19.222	10.775	ANOVA	28.0
3. 40-59	476	15.664	8.463	F = 49.8616***	15.7
4. 60-79	348	13.770	7.661	df = 4,1628	10.0
5. 80-99	218	12.784	7.435	r = −0.3204	6.3

* $p < .05$ ** $p < .01$ *** $p < .005$

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TABLE 10. PREDICTION OF DEPRESSION SCORES FROM AGE, SES, SEX, AND RACE

REGRESSION COEFFICIENTS

Variable*	B	Standardized Beta	Std Error B	F	Sig.
AGE	−0.01086	−0.02005	0.01328	0.669	N.S.
SES	−0.12273	−0.30137	0.01121	119.763	$p < .001$
BLACK	0.96511	0.04152	0.60836	2.517	N.S.
FEMALE	2.60416	0.13375	0.45426	32.865	
CONSTANT	21.47261				$p < .001$

EQUATION

$Y = \beta_1$ Age + β_2 SES + β_3 Black + β_4 Female + β_0

$Y = -.01086$ Age + $-.12273$ SES + 0.96511 Black + 2.60416 Female +21.47261

ANALYSIS OF VARIANCE

	df	Sum of Squares	Mean Square	F
Regression	4.	19321.85094	4839.46273	58.87
Residual	1625.	133394.13925	82.08870	

Multiple R	0.35570
R Square	.12652
Standard Error	9.96028

* Uncollapsed scores were used for all variables.

this includes a disproportionately large number of blacks, are most often treated in public facilities and, therefore, are more likely to be identified and counted than the economically advantaged members of the society. The findings from the few prevalence studies which have addressed the issue have been inconclusive. Moreover, the analytic techniques utilized to interpret the data were less powerful than those now available.

In our research we have attempted to deal with some of the design and analysis problems which often contaminated earlier investigations. We obviated many of the shortcomings of research which utilized populations in treatment as a basis for making comparisons. This was done by securing true prevalence data from a sample of persons selected on the basis of statistical probability techniques, and by presenting the data in both uncontrolled statistical correlations and in step-wise multiple regression equations.

When the data are presented without controls, blacks have significantly higher scores than whites on all five of the scales. Some of the differences were quite large. For example, there were twice as many blacks as whites in the "high" groups on the general psychopathology scale and three times as many "high" on the phobia measure. But, importantly, when the data are controlled for other variables, i.e., age, sex, and socioeconomic status, the results are quite different. The variable black is barely significant in the equation for general psychopathology and not significant in any of the other equations with the exception of the one designed to measure phobias.

These findings strongly suggest that race, as an independent variable, does not appear to be an important predictor of mental illness. This is demonstrated by the lack of statistical significance for race in the regression equations and by the relatively small amount of total variance explained by several of the scales. The one scale which distinguishes between racial groups is the one constructed to measure phobic thoughts. The scores were particularly high for black females. A careful analysis of the items included in this scale suggests that black affirmative responses to them may be an accurate assessment of the reality within which they live. Blacks are consistently subjected more often to bodily

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harm than whites. Homocide is among the ten primary causes of death for both black males and females. Hence, it is realistic for them to fear strangers, and to be apprehensive about being injured. We do not intend to indicate that differences in the phobia scores are not important or not significant. We are suggesting, however, that some of the items which constitute the scale are culture specific to blacks and, as a consequence, the results should be interpreted cautiously.

In conclusion, the data reported strongly suggest that the differences in mental health scores between blacks and whites, with the exception of the phobia measure, are largely non-significant in a statistical sense when controlled for other key sociodemographic variables. Further research will, of course, need to be conducted before definitive conclusions can be reached. For the present, however, we can conclude that race, along with the other sociodemographic variables included, tends to be symptom specific and relegated to a subordinate position in the equation when socioeconomic factors are included.

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